



NIST Update

Visiting Committee on Advanced Technology

Outline

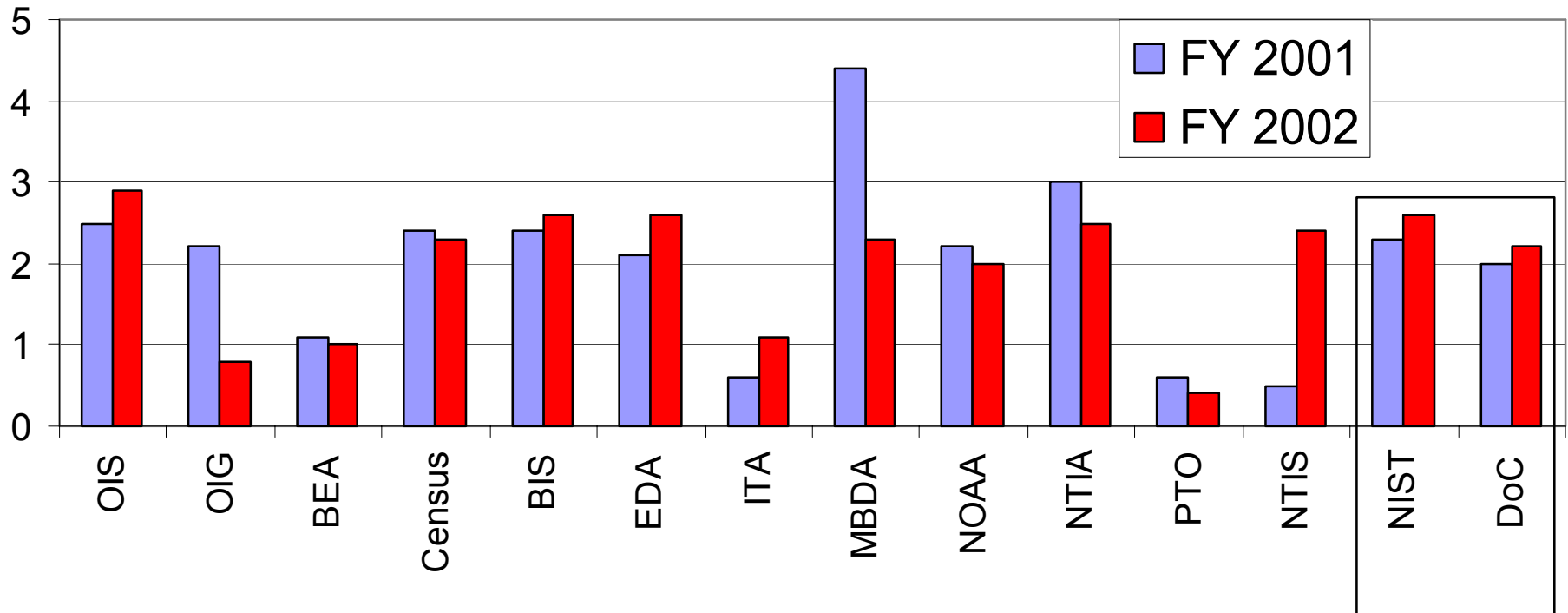
- Safety Update
- Baldrige Awards
- Homeland Security
- Budget and Planning
- NIST organizational issues

Safety at NIST

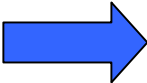
- Safety Council Action Plan approved by Senior Management Board.
- NIST senior management attending safety training at DuPont Experimental Station in Wilmington.
 - Follow up on June DuPont Executive Leadership Workshop on safety.
 - Two groups of about 20 senior NIST leaders for visits on December 3 and 17.
 - Other NIST groups planning visit in January.
- Improving safety performance is a key metric on the new NIST-Wide Balanced Scorecard.

Safety at NIST

Department of Commerce Total Case Incidence Rate



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2002 Malcolm Baldrige Quality Awards

- Motorola Inc. Commercial, Government and Industrial Solutions Sector, Schaumburg, IL – manufacturing.
- Branch-Smith Printing Division, Fort Worth, TX – small business.
- SSM Health Care, St. Louis, MO – health care.



<u>Category</u>	<u>Applicants</u>	<u>Finalists</u>
Manufacturing	8	2
Small business	3	3
Service	11	2
Education	10	0
Health Care	<u>17</u>	<u>4</u>
	49	11

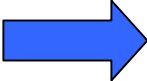
2002 Malcolm Baldrige Quality Awards



- SSM Health Care. Not-for-profit Catholic health care system.
- 21 acute care hospitals and 3 nursing homes in 4 states. (MO, IL, WI, OK)
- 22,000 staff, 5,000 affiliated physicians, \$1.7 billion revenues.

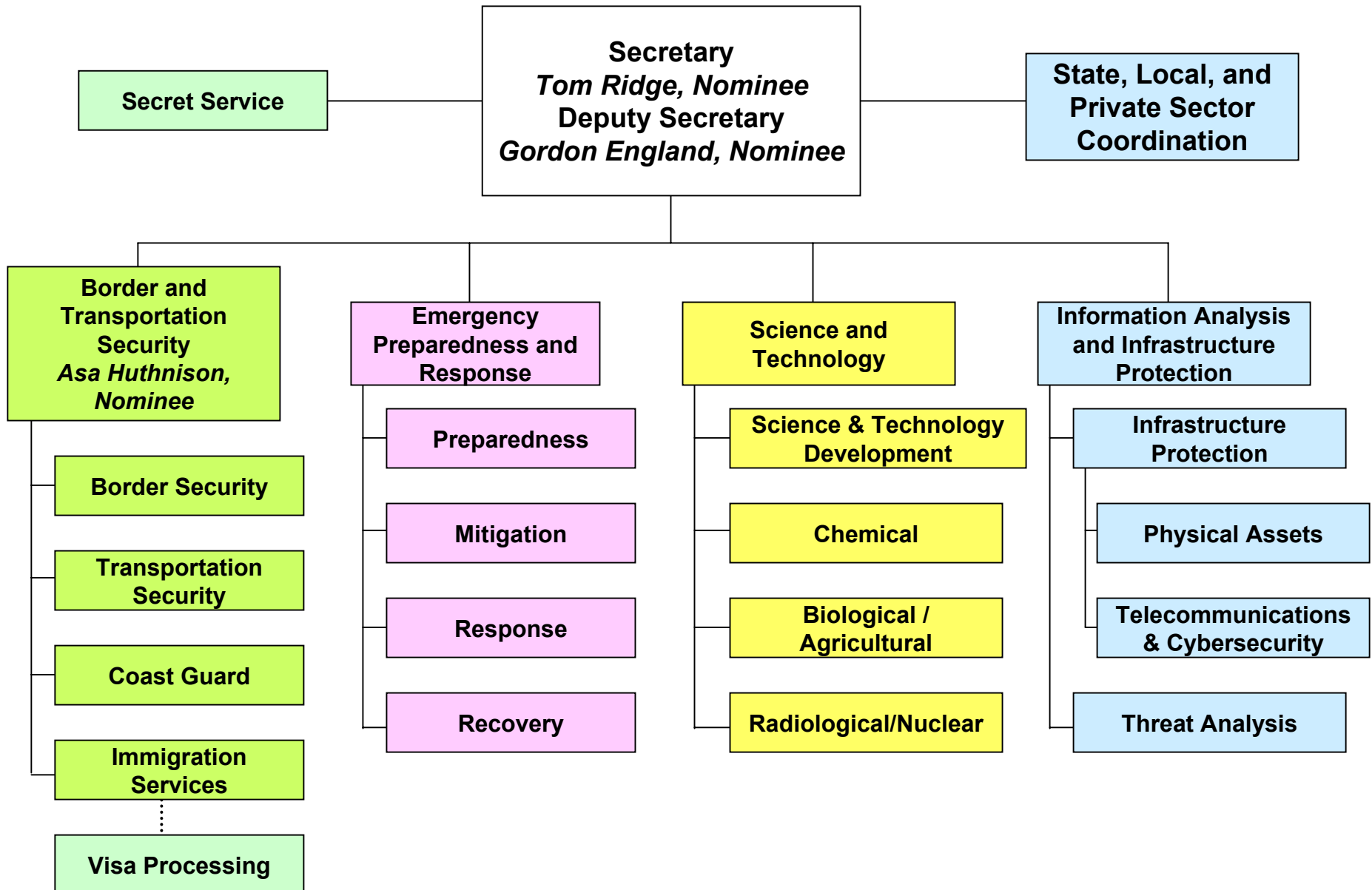
- Meets or exceeds national health care benchmarks in areas such as treatment of heart disease.
- Fourth consecutive “AA Credit Rating” – attained by fewer than 1 percent of U.S. hospitals.

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Department of Homeland Security

Signed into law by President November 25



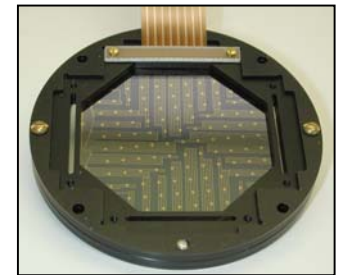
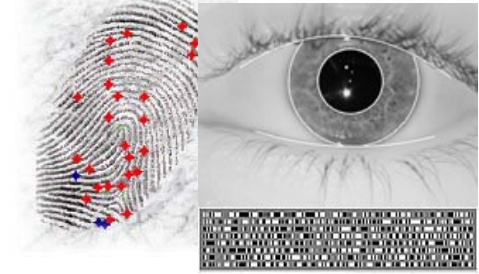
Homeland Security Act – Science & Technology

- The S&T Directorate will conduct, fund, and coordinate “basic and applied research, development, demonstration, testing, and evaluation activities that are relevant to any or all elements of the Department, through both intramural and extramural programs...”
- The S&T Directorate is explicitly directed to work with DoE laboratories on homeland security R&D.
- The Office for National Laboratories within S&T “shall be responsible for the coordination and utilization of the Department of Energy national laboratories and sites under this section in a manner to create a networked laboratory system for the purpose of supporting the missions of the Department.”
- Maximum use of voluntary consensus standards: “All standards activities of the Department shall be conducted in accordance with... the National Technology Transfer Advancement Act... and Office of Management and Budget Circular A-119.”

NIST Roles in Homeland Security

Provide measurements, standards, data, and expert guidance needed to support the Nation's homeland security. Examples include:

- WTC investigation.
- CBRNE detection and response.
- Computer security.
- Standards to support emergency responders.
- Biometrics (Patriot Act).

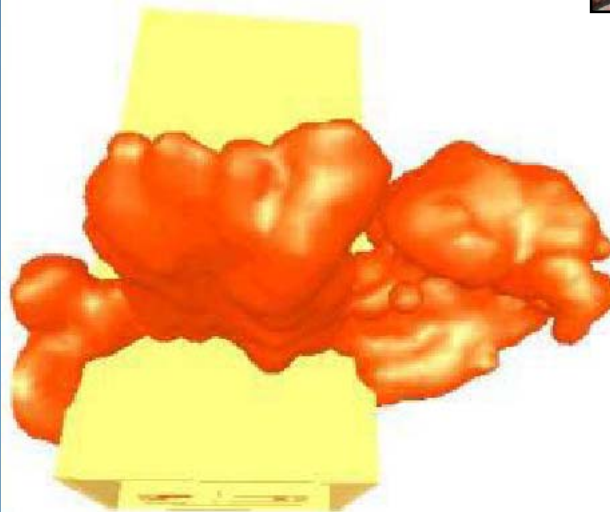


Major NIST customers for homeland security support include:

- Industry.
- State and local governments.
- Federal agencies.
- Emergency responders.

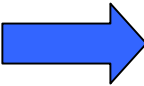
World Trade Center Investigation

- December 9: first periodic public update on progress since investigation formally launched August 21, 2002 .
- Key investigation materials identified and collected from public and private sources.
- Forensic metallurgical analysis begun for many of the 200+ samples of WTC steel received by NIST.
- Advisory Committee being established.



- Progress report, investigation plans, other information at wtc.nist.gov.

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NIST FY 2003 Budget Request (\$millions)

Appropriation:

	FY 2002 Approp- riation	FY 2003 President's Request	FY 2003 Senate Mark ¹
Scientific & Technical Research & Services (STRS):			
NIST Laboratories	\$324.8*	\$383.8	\$331.1*
National Quality Program	5.2	5.5	5.3
Subtotal, STRS	330.0	389.3	336.4
Industrial Technology Services (ITS):			
Advanced Technology Program (ATP)	184.5	107.0	185.4
Manufacturing Extension Partnership (MEP)	106.5	12.6	106.6
Subtotal, ITS	291.0	119.6	292.0
Construction of Research Facilities (CRF)	63.6*	54.2	63.8*
Total	684.6	563.1	692.2

**Contains Congressional earmarks*

¹Senate Appropriations Committee Mark

FY 2003 Budget Issues for NIST

FY 2003 Senate Appropriations Committee mark poses two major threats to NIST Laboratory programs:

1. SCMMR

- Devastating cut in President's request for safety and maintenance of Laboratory facilities.
 - Provides only \$1.2 million vs. \$21.9 million President's request and \$20.9 million FY 2002 level for Safety, Capacity, Maintenance and Major Repairs (SCMMR) based on other earmarks in appropriation.

2. Advanced Measurement Laboratory (AML)

- Severely compromised ability to use the AML.
 - No funding for President's request of \$35 million for critically-needed research equipment for the AML.
 - No funding for President's request for AML utilities (\$3.9 million).

Facilities Maintenance: Safety, Capacity, Maintenance, and Major Repairs – SCMMR

Problem:

- \$1.2 million in Senate Committee mark compared to President's request of \$21.9 million.
- NRC benchmark study of federal facilities recommends investing 2 to 4 percent of replacement costs annually for maintenance and repair.

Impacts if Senate Committee mark enacted:

- NIST will not be able to cope with the approximately 15 major building system and facilities failures that occur each year.
- It is likely that parts of or entire laboratory buildings will have to be closed due to safety issues and inability to provide adequate research environment, severely impairing research and measurements.
- Critically-needed safety and security upgrades will not be completed.
- Results in millions of dollars in lost productivity and inability to fulfill mission.

Advanced Measurement Laboratory

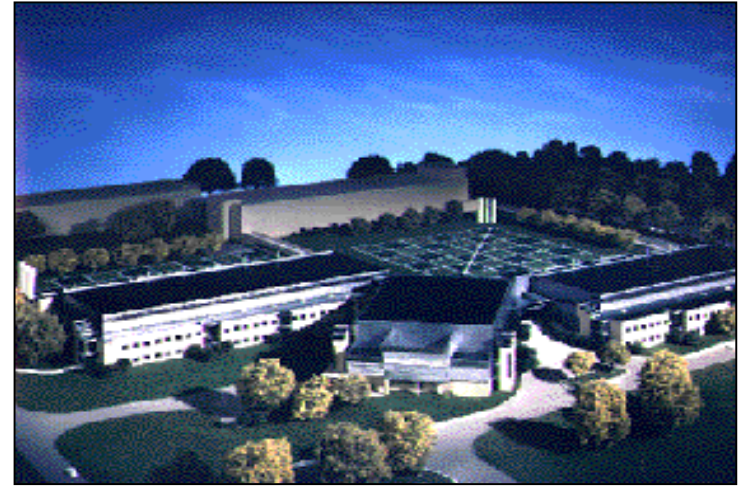
Problem:

- NIST needs new research and measurement equipment to fully utilize the unique AML environment.
- The complexity of the AML requires substantial operating, utilities, and specialized maintenance costs.
- Senate Committee mark includes NO funding for President's \$35 million request for highest priority equipment and NO funding for AML utilities (\$3.9 million). Both are critical to full utilization of the AML.

Impacts if Senate mark enacted:

- Some parts of the AML will be unusable without new equipment.
- Lack of new equipment will severely impair the most advanced measurements and research the AML was designed to support.
- Lack of funds for increased utilities cost means reductions in other NIST programs, including likely RIFs.

Advanced Measurement Laboratory



Wing

Completion

Cleanroom (215)

June 2003

Instrument East (216)

August 2003

Metrology East (218)

August 2003

Instrument West (217)

October 2003

Metrology West (219)

December 2003

***Staff Relocation Complete - June 2004 (Assuming
FY03 Request Appropriated)***

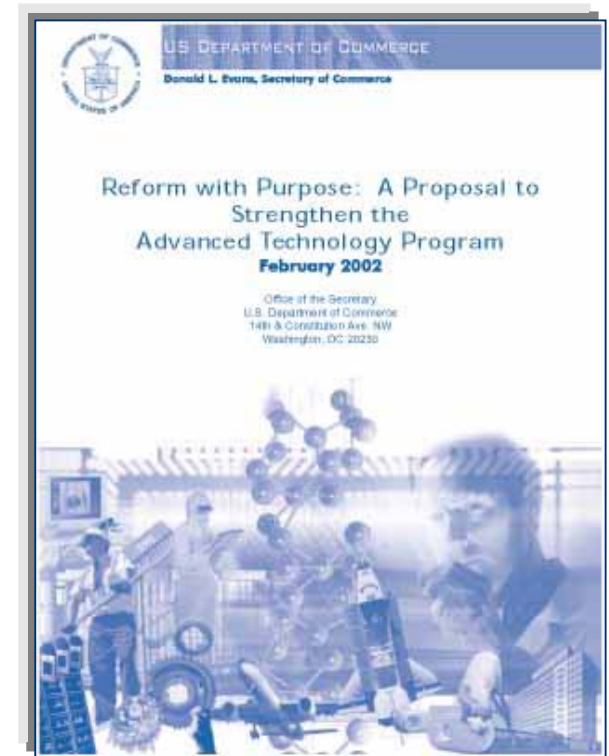
Advanced Measurement Laboratory

- **New equipment required for AML Clean Room wing.**
 - Existing equipment cannot be moved to AML without irrevocably contaminating the clean rooms.
- **More advanced equipment required for the most demanding measurements and research that the AML was designed to support.**
 - Most existing NIST equipment is not sufficiently advanced or sensitive to make use of the the tightly-controlled AML environment which minimizes vibration, temperature and humidity changes.
- **Measurements and research in the AML will support the most important national technology areas.**
 - Homeland security, nanotechnology, advanced manufacturing, information technology, new materials, and other key technology areas.
- **The AML will be a more productive measurement and research facility, but will require increased utilities and future operating costs.**
 - Highly complex building with active environmental controls will have higher utility and specialized maintenance costs.

Advanced Technology Program Update

Reforms proposed by Administration:

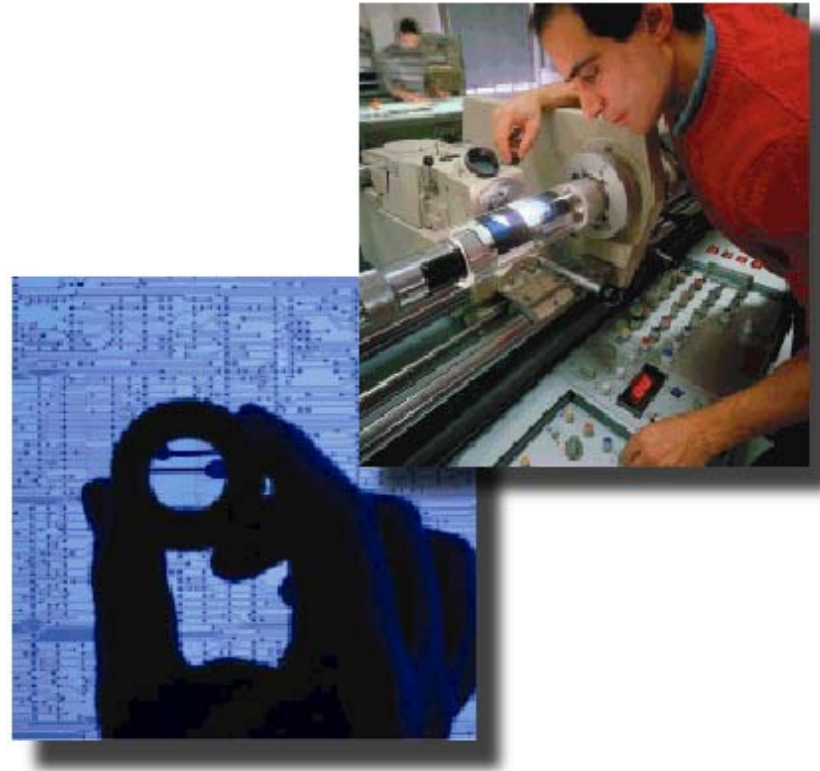
- Universities can lead ATP joint ventures.
- Intellectual property rights negotiations.
- Large companies cannot lead projects.
- Recoupment of federal investments (up to 500%).
- ATP funding not for commercialization.
- Study potential improvements in project selection boards.



- Approximately \$61 million in new projects for FY 2002 awarded in two batches: June and September .
- FY 2003 Senate mark includes \$60.7 million for new awards (\$185.4 million total program level).

Manufacturing Extension Partnership Program Update

- President's FY2003 budget proposes eliminating federal cost share for Centers more than six years old (all but two of the current Centers).
- President's \$12.6 million request will fund central federal MEP activities and federal share of newer centers.
- FY 2003 Senate mark includes full funding for program at FY 2002 level (\$106.6 million).



New Legislative Mandates for NIST

- **Several high visibility new legislative mandates with key NIST roles.**
- **NIST consulting with Department on budget issues related to mandates.**
- **Cyber Security Research and Development Act**
 - \$40 million/year grants to institutes of higher education for cyber security R&D.
 - Intramural NIST cyber security R&D.
 - Develop checklists for federal IT systems security. Enhanced activities of Information Security and Privacy Board (formerly Computer Systems Security and Privacy Board).
- **Federal Information Security Management Act (FISMA)**
 - Enhanced cyber security standards and guidelines for federal IT systems.
 - Strengthen private sector IT security testing and conformance systems
- **Help America Vote Act**
 - Support the Technical Guidelines Development Committee chaired by the NIST Director.
 - Develop voluntary technical standards and tests to ensure usability, accuracy, and security of voting systems.
 - Consult with Election Administration Commission on grants for extramural voting technology R&D.

New Legislative Mandates for NIST

- **National Construction Safety Team Act**

- NIST to lead National Construction Safety Teams to investigate building disasters.
- Similar to National Transportation Safety Board investigations of transportation disasters.
- Clearly specifies NIST as the lead federal agency in building disaster investigations, resolving confusion following 9/11.

- **Enterprise Integration Act**

- NIST to work with private sector to develop enterprise integration roadmaps, conformance testing and interoperability standards, pilot projects demonstrating effectiveness of enterprise integration.
- Aerospace, automotive, chemical, electronics, shipbuilding, construction, home building, furniture, textiles and apparel.

Strategic Trends Impacting NIST

- Political environment:
 - Homeland security.
 - Constrained budgets.
 - Management initiatives for federal agencies.
- General R&D trends:
 - Increasingly interdisciplinary nature of R&D.
 - Decreasing fraction of U.S. R&D conducted by federal laboratories.
 - Increasingly distributed nature of R&D networks and organizations, including globalization.


Implementing NIST 2010—Outreach

- Seek to identify unique opportunities for NIST to develop focused partnerships with government, universities, and industry for mutual benefit.
- Possible opportunities (examples, not a comprehensive list):
 - NIH—intersection of biological and physical sciences.
 - NSF—possible focus on nanoscience and engineering.
 - Homeland Security Department agencies (TSA, etc.).
 - University of Maryland—various colleges and departments.
 - University of Maryland Biotechnology Institute—expand beyond the current successful CARB partnership.
- Strengthen and expand partnerships with industry.
 - Industry is NIST's natural constituent.
- Partnerships and stakeholder endorsements of NIST 2010 plan help build credibility for NIST 2010 within the Administration and Congress.

Partnership Opportunities – Federal Agencies

- NIH completed 5-year budget doubling to \$27 billion.
 - Meeting with NIH Director Elias Zerhouni and other NIH leaders Nov. 19.
 - Follow-up planning workshops and mutual visits being developed.
- Congress passed bill November 15 to double NSF funding from \$4.8 billion in FY 2002 to \$9.8 billion in FY 2007.
 - (President will likely have signed the bill by the VCAT meeting...)
 - Exploring possibility of NSF funding of joint R&D centers with universities.
- NIST visit to TSA R&D laboratories January 7.
 - About 15 NIST leaders and technical staff planning to attend.

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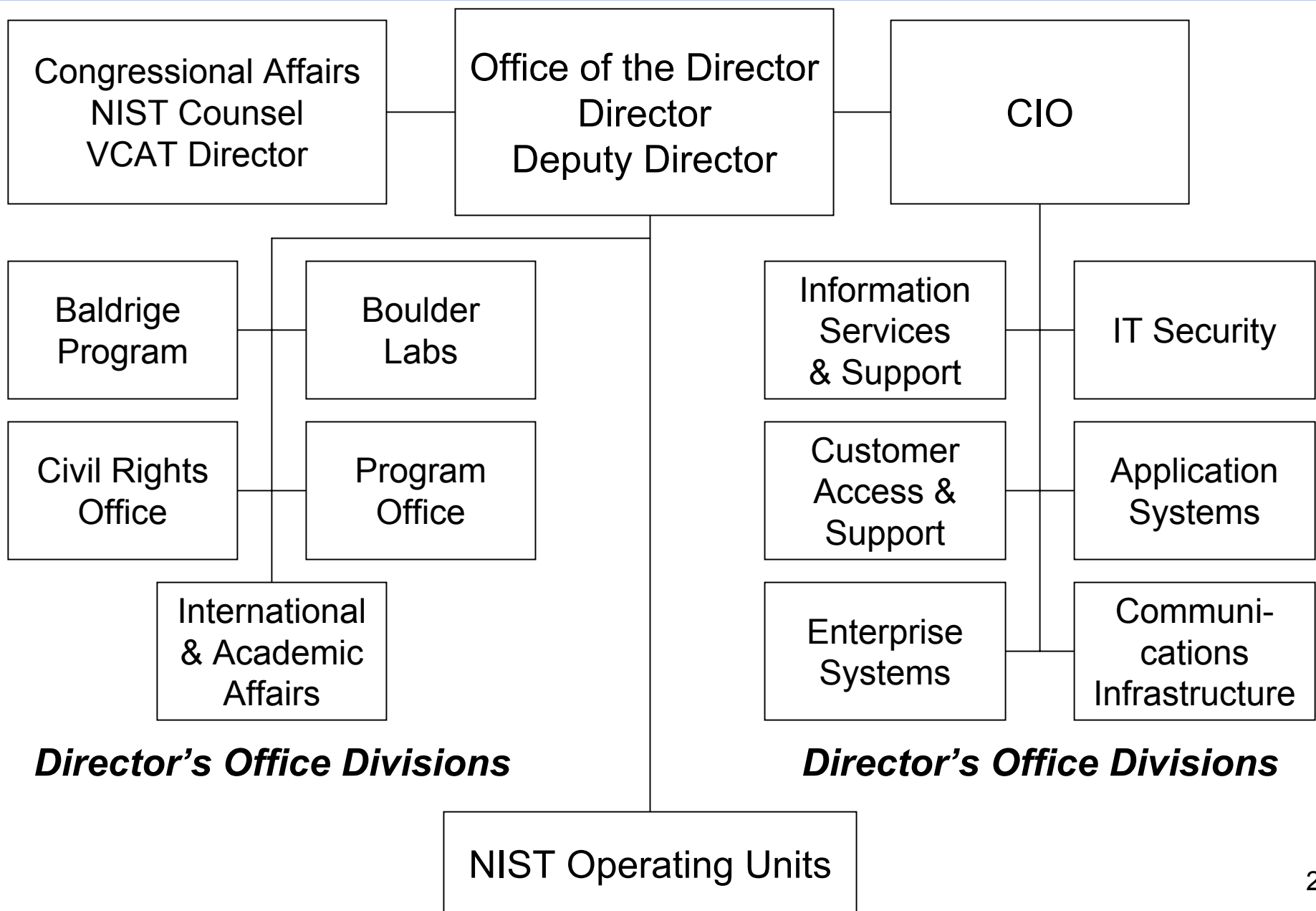
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NIST CIO / IT Services Plan

- NIST plan for centralizing IT services in a new Chief Information Officer (CIO) organization in Director's Office under review at DoC.
- Cita Furlani named Acting CIO.
 - Experience in MEL, ATP, Executive Office of the President, NIST Program Office.
- IT services and internal IT security personnel detailed to Director's Office under Acting CIO.
- National search for CIO after Commerce approval.



NIST CIO / IT Services PROPOSAL



NIST-Wide Balanced Scorecard

- Focus attention of NIST senior management on key strategic and organizational issues.
- Two or three metrics in each of five main areas: Employees, Customer Focus, Strategy, Finance, and Operations.
- Metrics to eventually be cascaded as appropriate throughout NIST individual performance plans.
- Metrics currently included in NIST OU Director performance plans.

NIST Employee and Associates Surveys

- Administered November 4 through December 6.
- Detailed results to be reported in January.
- Third NIST-wide Employee survey.
 - 1999, 2000, 2002.
- First NIST-wide survey of NIST Associates.
 - Guest researchers, contractors, etc.
 - Approximately 1,200 NIST Associates per year; about 500 on-site at any time.
- New NIST-Wide Balanced Scorecard includes survey-based metrics.
 - Improvements in employee morale/satisfaction.
 - Employee awareness of and support for NIST mission, vision, values, and strategic direction.